

*Table S1a:* Summary of Stepwise regression analysis results of abiotic factors with a significant influence on macrobenthic diversity indices

<b>Stepwise regression result summary</b>	
<b>Diversity Index</b>	<b>Predictors (feedback)</b>
H' diversity	None (No variables were entered into the equation)
Richness	DO
Dominance	None (No variables were entered into the equation)
oneminusD	None (No variables were entered into the equation)
evenness	None (No variables were entered into the equation)
margalef	TOM
Berger_Parker	None (No variables were entered into the equation)
Equitability_J	None (No variables were entered into the equation)
Fisher_alpha	None (No variables were entered into the equation)
Brillouin	None (No variables were entered into the equation)
Menhinick	Very Coarse Sand

*Table S1b(1):* Model Summary for Stepwise regression analysis of abiotic predictors of species richness in the Benguela upwelling system.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722 <sup>a</sup>	.521	.467	1.92590

a. Predictors: (Constant), DO

*Table S1b(2):* ANOVA results for stepwise regression analysis of the predictor of macrobenthic species richness in the Benguela Upwelling system.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	36.254	1	36.254	9.774	.012 <sup>b</sup>
Residual	33.382	9	3.709		
Total	69.636	10			

a. Dependent Variable: Richness

b. Predictors: (Constant), DO

*Table S1c(1): Model Summary for Stepwise regression analysis of abiotic predictors of Margalef Index in the Benguela upwelling system.*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.610 <sup>a</sup>	.372	.302	.7403625

a. Predictors: (Constant), TOM

*Table S1c(2): ANOVA results for stepwise regression analysis of the predictor of Margalef Index richness in the Benguela Upwelling system*

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.919	1	2.919	5.324	.046 <sup>b</sup>
Residual	4.933	9	.548		
Total	7.852	10			

a. Dependent Variable: margalef

b. Predictors: (Constant), TOM

*Table S1d(1): Model Summary for Stepwise regression analysis of abiotic predictors of Menhinick in the Benguela upwelling system.*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.627 <sup>a</sup>	.393	.325	.52573

a. Predictors: (Constant), V\_Coarse\_Sand

*Table S1d(2): ANOVA results for stepwise regression analysis of the predictor of Menhinick in the Benguela Upwelling system*

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.610	1	1.610	5.825	.039 <sup>b</sup>
Residual	2.488	9	.276		
Total	4.098	10			

a. Dependent Variable: Menhinick

b. Predictors: (Constant), V\_Coarse\_Sand